

Notice of References Cited

Application/Control No.

09/405,653

Examiner

Minh-Quan K. Pham

Applicant(s)/Patent Under
Reexamination
NIE ET AL.

Art Unit

1641

Page 1 of 3

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
							APS	OTHER
<input type="checkbox"/>	A	5990479	Nov. 1999	Weiss et al.	250	307	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	B	5751018	May. 1998	Alivisatos et al.	257	64	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	C	5505928	Apr. 1996	Alivisatos et al.	423	299	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	D						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	E						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	F						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	G						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	H						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	I						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	J						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	K						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	L						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	M						<input type="checkbox"/>	<input type="checkbox"/>

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
								APS	OTHER
<input type="checkbox"/>	N							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	O							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	P							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Q							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	R							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	S							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	T							<input type="checkbox"/>	<input type="checkbox"/>

NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title Date, Source, and Pertinent Pages)					DOCUMENT SOURCE **	
							APS	OTHER
<input type="checkbox"/>	U	Lawless et al. (1995). Bifunctional capping of CdS nanoparticles and bridging to TiO ₂ . J. Phys. Chem. 99:10329-10335.					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	V	Hines et al. (1996). Synthesis and characterization of strongly luminescing ZnS-capped CdSe nanocrystals. J. Phys. Chem. 100:468-471.					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	W	Matsumoto et al. (1996). Preparation of nonodisperse CdS nanocrystals by size selective photocorrosion. J. Phys. Chem. 100:13781-13785.					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	X	Danek et al. (1996). Synthesis of luminescent thin-film CdSe/ZnSe quantum dot composites using CdSe quantum dots passivated with an overlayer of ZnSe. Chem. Mat. 8:173-180.					<input type="checkbox"/>	<input type="checkbox"/>

*A copy of this reference is not being furnished with this Office action. (See Manual of Patent Examining Procedure, Section 707.05(a).)

**APS encompasses any electronic search i.e. text, image, and Commercial Databases.

U.S. Patent and Trademark Office

PTO-892 (Rev. 03-98)

Notice of References Cited

Part of Paper No. 9

Notice of References Cited

Application/Control No.

09/405,653

Applicant(s)/Patent Under
Reexamination
NIE ET AL.

Examiner

Minh-Quan K. Pham

Art Unit

1641

Page 2 of 3

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
							APS	OTHER
<input type="checkbox"/>	A						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	B						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	C						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	D						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	E						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	F						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	G						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	H						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	I						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	J						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	K						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	L						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	M						<input type="checkbox"/>	<input type="checkbox"/>

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
								APS	OTHER
<input type="checkbox"/>	N							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	O							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	P							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Q							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	R							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	S							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	T							<input type="checkbox"/>	<input type="checkbox"/>

NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title Date, Source, and Pertinent Pages)					DOCUMENT SOURCE **	
							APS	OTHER
<input type="checkbox"/>	U	Dabbousi et al. (1997). (CdSe)ZnS core-shell quantum dots: synthesis and characterization of a size series of highly luminescent nanocrystallites. J pHys Chem. B. 101:9463-9475. /					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	V	Murray et al. (1993). Synthesis and characterization of nearly monodisperse CdE (E=S, Se, Te) semiconductor nanocrystallites. J. Am. Chem. Soc. 115(19):8706-8715. /					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	W	Norris et al. (1996). Measurement and assignment of the size-dependent optical spectrum in CdSe quantum dots. Phys. Rev. B. 53(24):16338-16346. /					<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	X	Norris et al. (1996). Size dependence of exciton fine structure in CdSe quantum dots. Phys. Rev. B. 53(24):16347-16354.					<input type="checkbox"/>	<input type="checkbox"/>

*A copy of this reference is not being furnished with this Office action. (See Manual of Patent Examining Procedure, Section 707.05(a).)

**APS encompasses any electronic search i.e. text, image, and Commercial Databases.

U.S. Patent and Trademark Office

PTO-892 (Rev. 03-98)

Notice of References Cited

Part of Paper No. 9

Notice of References Cited

Application/Control No.

09/405,653

Examiner

Minh-Quan K. Pham

Applicant(s)/Patent Under
Reexamination
NIE ET AL.

Art Unit

1641

Page 3 of 3

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
							APS	OTHER
<input type="checkbox"/>	A						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	B						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	C						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	D						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	E						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	F						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	G						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	H						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	I						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	J						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	K						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	L						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	M						<input type="checkbox"/>	<input type="checkbox"/>

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
								APS	OTHER
<input type="checkbox"/>	N							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	O							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	P							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Q							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	R							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	S							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	T							<input type="checkbox"/>	<input type="checkbox"/>

NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title Date, Source, and Pertinent Pages)	DOCUMENT SOURCE **	
			APS	OTHER
<input type="checkbox"/>	U	Covin et al. (1994). Light-emitting diodes made from cadmium selenide nanocrystals and a semiconducting polymer. Nature. 370:354-357. /	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	V	Dabbousi et al. (1995). Electroluminescence from CdSe quantum-dot/polymer composites. Appl. Phys. Lett. 66(11):1316-1318.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	W	Alivisatos (1996). Perspectives on the physical chemistry of semiconductor nanocrystals. J. Phys. Chem. 100(31):13226-13239.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	X	Nirmal et al. (1996). Fluorescence intermittency in single cadmium selenide nanocrystals. Nature. 383:802-804.	<input type="checkbox"/>	<input type="checkbox"/>

*A copy of this reference is not being furnished with this Office action. (See Manual of Patent Examining Procedure, Section 707.05(a).)

**APS encompasses any electronic search i.e. text, image, and Commercial Databases.

U.S. Patent and Trademark Office

PTO-892 (Rev. 03-98)

Notice of References Cited

Part of Paper No. 9

FORM PTO-1449 MODIFIED	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 202406	SERIAL NO. 09/405,653
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		APPLICANT Nie et al.	
		FILING DATE September 24, 1999	GROUP 1765

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS		PATENT NUMBER	ISSUE DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
MA	AA	5,441,746	Aug. 15, 1995	Chagnon	424	—	
	AB	5,389,377	Feb. 14, 1995	Chagnon et al.	424	—	
	AC	5,248,772	Sept. 28, 1993	Siiman et al.	536	—	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO*
MA	AD	WO 93/26019	Dec. 23, 1993	PCT	—	—		
	AE	WO 93/15117	Aug. 5, 1993	PCT	—	—		
	AF	WO 91/09678	Jul. 11, 1991	PCT	—	—		
	AG	WO 90/15666	Dec. 27, 1990	PCT	—	—		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

MA	AH	Alivisatos, "Semiconductor Clusters, Nanocrystals, and Quantum Dots," <i>Science</i> , 271, 933-37 (1996).
	AI	Alivisatos, "Perspectives on the Physical Chemistry of Semiconductor Nanocrystals," <i>J. Phys. Chem.</i> , 100, 13226-39 (1996).
	AJ	Blanton et al., "Photoluminescence Wandering in Single CdSe Nanocrystals," <i>Appl. Phys. Lett.</i> , 69, 3905 (1996).
	AK	Bowden Katari et al., "X-ray Photoelectron Spectroscopy of CdSe Nanocrystals with Applications to Studies of the Nanocrystal Surfaces," <i>J. Phys. Chem.</i> , 98, 4109-4117 (1994).
	AL	Brus, "Quantum Crystallites and Nonlinear Optics," <i>Appl. Phys.</i> , A 53, 465-74 (1991).
	AM	Dabbousi et al., "(CdSe)ZnS Core-Shell Quantum Dots: Synthesis and Characterization of a Size Series of Highly Luminescent Nanocrystallites," <i>J. Phys. Chem.</i> , B 101, 9463-75 (1997).
	AN	Edwards et al., "The Nucleation of Receptor-Mediated Endocytosis," <i>PNAS</i> , 93(5), 1785-1791 (1996).
	AO	Empedocles et al., "Photoluminescence Spectroscopy of Single CdSe Nanocrystallite-Quantum Dots," <i>Phys. Rev. Lett.</i> , 77, 3873 (1996).
	AP	Henglein, "Small-Particle Research: Physicochemical Properties of Extremely Small Colloidal Metal and Semiconductor Particles," <i>Chem. Rev.</i> , 89, 1861-73 (1989).
	AQ	Hines et al., "Synthesis and Characterization of Strongly Luminescing ZnS-Capped CdSe Nanocrystals," <i>J. Phys. Chem.</i> , 100, 468-71 (1996).
	AR	Lee et al., "Surface Derivatization of Nanocrystalline CdSe Semiconductors," <i>Mat. Res. Soc. Symp. Proc.</i> , 452, 232-328 (1997).
	AS	Mikulec et al., "Fluorescent Semiconductor Nanocrystallites Derivatized with Biomolecules," <i>Abst. Papers of Am. Chem. Soc.</i> , 216 (3), P 018 MACR (1998).
	AT	Murray et al., "Synthesis and Characterization of Nearly Monodisperse CdE (E=S, Se, Te) Semiconductor Nanocrystallites," <i>J. Am. Chem. Soc.</i> , 115, 8706-8715 (1993).
	AU	Nirmal et al., "Fluorescence Intermittency in Single Cadmium Selenide Nanocrystals," <i>Nature</i> , 383, 802 (1996).
	AV	Smythe et al., "The Mechanism of Receptor-Mediated Endocytosis," <i>Eur. J. Biochem.</i> , 202, 689 (1991).
	AW	Weller, "Colloidal Semiconductor Q-Particle: Chemistry in the Transition Region Between Solid State and Molecules," <i>Angew. Chem. Int. Ed. Engl.</i> , 32, 41-53 (1993).
	AX	Wilson et al., "Quantum Confinement in Size-Selected, Surface-Oxidized Silicon Nanocrystals," <i>Science</i> , 262, 1242-46 (1993).

EXAMINER

DATE CONSIDERED

9/00